



CITY OF SCOTTSDALE

FIRE ALARM INTERPRETATIONS & APPLICATIONS

ORDINANCE 3507
SCOTTSDALE REVISED CODE
SEPTEMBER 16th, 2003



CITY OF SCOTTSDALE - RURAL/METRO FIRE DEPT.

Fire Alarm Interpretations & Applications Table

References: 2003 IFC, 2003 IBC, 2003 UMC, 1999 NEC, 2002 NFPA 72, 2002 NFPA 90A
2003 NFPA 101, State Fire Code, ADA, & Scottsdale Revised Code. (Revised 11-19-03)



Occupancy Classification	Fire Alarm Criteria & References	Automatic Detection
GROUP A	A fire alarm system is required with an occupant load of 300 or more in accordance w/ the 2003 IFC sec. 907.2.1. Group A occupancies w/ an occupant load of 1000 or more shall follow the requirements of the 2003 IFC sec. 907.2.1.1 for a voice/alarm communications system.	Reference Note # 1
GROUP B	A fire alarm system is required w/ an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge in accordance with the 2003 IFC sec. 907.2.2.	Reference Note # 1
GROUP E*	A fire alarm system is required w/ a manual fire alarm box in a constantly attended location. Exterior weatherproof Horn-Strobe(s) are required at all building access sides. No requirement with an occupant load of less than 50.	Reference Note # 1 & 2
GROUP F	A fire alarm system is required when two or more stories in height and have an occupant load of 500 or more above or below the lowest level of exit discharge in accordance w/ the 2003 IFC sec. 907.2.4.	Reference Note # 1
GROUP H	A manual fire alarm system shall be required in <u>all</u> Group H occupancies. The fire alarm system shall extend to all occupied areas of the building. Fire walls <u>shall not</u> be used to define a separate building in Group H occupancies when applying fire alarm requirements.	Reference Note # 1 & 3
GROUP I*	A manual fire alarm System is required in accordance w/ the 2003 IFC sec. 907.2.6 through 907.2.6.2.3 and 907.10.1.2 through 907.2.10.1.3. Notification appliances shall be chime/strobes throughout patient areas.	Reference Note # 1, 6 & IFC
GROUP M	A fire alarm system is required with an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge. For covered mall buildings see section 907.2.20.	Reference Note # 1
GROUP R	A fire alarm system is required in accordance with the 2003 IFC sec. 907.2.8 through 907.2.10.1.2.	Reference Note # 1, 4 & 5
GROUP S	A fire alarm system is required in <u>closed</u> parking garages of any grade and open parking garages 4 or more levels in height. Due to the type of construction in parking garages, special consideration may given when evaluating for adequate placement of notification appliances to meet the intent of adopted codes and standards.	Reference Note # 1

Interior Tenant Notification

Interior Tenant Notification shall be provided when monitoring of the fire sprinkler system is provided.

(Group R occupancies are exempt from this requirement.)

Shell Buildings: 1 horn-strobe shall be installed and operational within the interior space prior to final. When demising walls are present, 1 horn-strobe shall be installed above the main door or within 3 ft. of the main door for each space. Multi-story buildings shall require a minimum of 1 Horn-Strobe per level.

Tenant Improvements (Shell build-outs): Install 1 horn-strobe above the main door or within 3 ft. of the main door for individual tenants. When a common area is provided serving multiple tenants, install 1 horn-strobe in the common area above the main door or within 3 ft. of the main door.

Note: These requirements may be increased based on occupancy type or at the discretion of the Fire Chief.

This is not intended to be an ADA compliant system. (Reference: Sctdl. Revised Codes, sec. 903.4.2)

Note: The 2003 IFC & IBC shall be deemed as prima facie evidence of compliance. The purpose of this document is to modify existing adopted Codes & Standards and to offer clarification for the interpretation of those codes. Other occupancy specific fire alarm requirements not addressed by this document may be found in the 2003 IFC & IBC. Current NFPA Standards may be referenced for any specific requirement not addressed by this document or the 2003 IFC & IBC.

* These systems are required to be designed and installed such that the failure, removal, or destruction of any single alarm actuating or indicating device or a break in the wiring circuit will not interfere with the normal operation of any actuating or indicating device. Ref: State Fire Code.

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Reference Notes For Automatic Detection

- Note 1: Protection of Fire Alarm Control Units (Panels).** In areas that are not continuously occupied, automatic smoke detection shall be provided at the location of each fire alarm control unit to provide notification of fire at that location. (2002 NFPA 72 sec. 4.4.5)
Fire Alarm Control Units shall be connected to a dedicated branch circuit of the building power service.
- Note 2:** Group E occupancies shall be provided with automatic detection throughout. School campus auditoriums, cafeterias, gymnasiums and the like shall be protected by smoke detectors or other approved detection devices.
- Note 3:** An automatic smoke detection system shall be installed for highly toxic gases, organic peroxides and oxidizers in accordance with Chapters 37, 39 and 40, respectively.
- Note 4:** Guest rooms for the hearing impaired shall have audio/visual devices activated by both the in-room smoke detector and the building fire alarm system.
- Note 5:** Single station smoke detectors required in dwelling units and guest rooms, with no requirement for the hearing impaired, shall not be connected to the building audio/visual devices, however may be connected to the building fire alarm panel for a supervisory condition.
- Note 6:** Chime/strobes shall meet all the installation requirements of NFPA 72 including DBA level, flash rate and candela intensity. Additional chimes shall be installed where necessary to meet the required DBA level.

Fire Alarm Requirements for Mixed Occupancies

Occupancies that depend on occupant load criteria to determine when a fire alarm system is required shall include the total building occupant load and extend the fire alarm system to all occupied areas of that building.

Plan Submittal Requirements (Note: Fax submittals no longer accepted after Jan. 1st, 2004)

All plan submittals logged into the One-Stop Shop for review shall be in accordance with the standard plan review format as provided by the Arizona Automatic Fire Alarm Association and adopted by Scottsdale Rural/Metro Fire Department. A minimum NICET level III is required for submittal.
For a copy of the standard plan review format, you may contact our office or visit AAFAA's web site at www.azafaa.org.

Access-controlled egress doors or delayed egress locks

Plan submittals are required by the installing contractor and shall follow the installation requirements of the 2003 IFC sec. 1008.1.3.4 & sec. 1008.1.8.6.

Manual Fire Alarm Boxes

Manual fire alarm boxes are permitted in Educational in a constantly attended location. Hazardous and Institutional occupancies shall be in accordance with their respective code sections.

Exception: The Fire Department may require one or more manual fire alarm boxes installed in a secured or constantly attended location in other occupancies.

Fire Sprinkler Monitoring of Flow Switches & Tampered Control Valves

Flow switches & tampered control valves on fire sprinkler systems that are required to be monitored shall be connected to the fire alarm control panel & indicate floor and/or area.

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Elevator Hoistways & Machine Rooms – Automatic Fire Detection Requirements

Actuation from elevator hoistway and elevator machine room smoke detectors or other automatic fire detection shall cause a separate and distinct visible annunciation at the control unit (FACP) and required annunciators to alert fire fighters and other emergency personnel that the elevators are no longer safe to use. Actuation of the elevator hoistway and elevator machine room smoke detectors shall initiate a supervisory signal.

Mercantile Strip Mall or Similar Structure – Fire Protection Equipment Zone Requirements

Fire alarm control panels **shall be a minimum of eight zone expandable panels** (revised 11-19-03) and be required to monitor smoke duct detectors, kitchen fire suppression systems or any other fire protection equipment and shall be zoned to identify individual suites or other required zones. **Exception: Fewer than eight zone panels may be permitted if consideration has been given to future tenant build-outs.**

Shell buildings shall have the wire and junction boxes installed for future horn/strobe placement as required for individual tenant spaces that meet the requirement for “Interior Tenant Notification”. Shell buildings shall also have the wire and junction boxes installed for HVAC units (future or existing) for individual tenant spaces for the supervision of duct smoke detectors. (Revised 11-16-04)

A separate Fire Alarm Panel may be installed within an individual tenant space if a network interface system is provided to communicate to the fire alarm control panel for that building, with all relay outputs for alarm, trouble and supervisory. If no fire alarm control panel is required for that building, then an individual tenant may elect to have a proprietary system, however, it must be in accordance with the requirements of NFPA 72 for Digital Alarm Communicator Transmitters.

Duct Smoke Detectors

The 2003 IFC Section 907.12 is revised to read as follows: Duct smoke detectors shall be connected to the building's fire alarm control panel when a monitored fire alarm system is provided. Activation of a duct smoke detector shall initiate a supervisory condition at the fire alarm control panel. Duct smoke detectors shall not be used as a substitute for required open area detection.

A fire alarm control panel that monitors duct smoke detectors shall be equipped with the necessary additional zone(s) to supervise individual tenant spaces or other required zones.

Exception #1: In occupancies not equipped with a monitored fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal (Annunciator Panel) in an approved location. Smoke detector trouble conditions shall activate a visible and an audible signal in an approved location and shall be identified as air duct detector trouble.

Exception #2: Existing building conditions prior to June 2000 in which there was no Fire Department requirement for the monitoring of duct smoke detectors at the time of shell construction, will not be required to upgrade the fire alarm control panel to accommodate the supervision of new or existing duct smoke detectors unless building modifications require all building systems to meet current Building Code requirements. When duct smoke detectors, new or existing, have been installed in buildings or tenant spaces not equipped with an approved fire alarm system, follow the requirements for exception # 1.

The 2002 edition of NFPA 72 Section 5.14.5.8 is revised to read as follows: Where in-duct smoke detectors are installed in concealed locations or in arrangements where the detector's supervisory indicator is not readily visible to responding personnel, the detectors shall be provided with remote supervisory indicators installed below the in-duct smoke detector(s) at ceiling level where applicable. This requirement shall be applied to both addressable and nonaddressable fire alarm systems. Access doors and appropriate signage shall be provided where necessary.

**INSPECTION REPORT OF HVAC AUTOMATIC SHUT-OFFS
AND SMOKE DAMPERS PER 2003 IMC & IBC.**

New installations of smoke detectors associated with smoke dampers and HVAC shut-offs shall be tested by the professional engineer of record, or an **approved** testing agency or a qualified third party special inspector. The testing agency or qualified third party special inspector shall be an **approved independent third party** individual or firm and shall not be the installing contractor.

The final report submitted to the fire inspector shall be signed, sealed (wet) and dated prior to certificate of occupancy. (2003 IBC Amendment 1704.13, item # 5, “Complex Electrical Installations”)